

# How CBO Forecasts Inflation

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Presentation to the  
Society of Actuaries

Bob Arnold

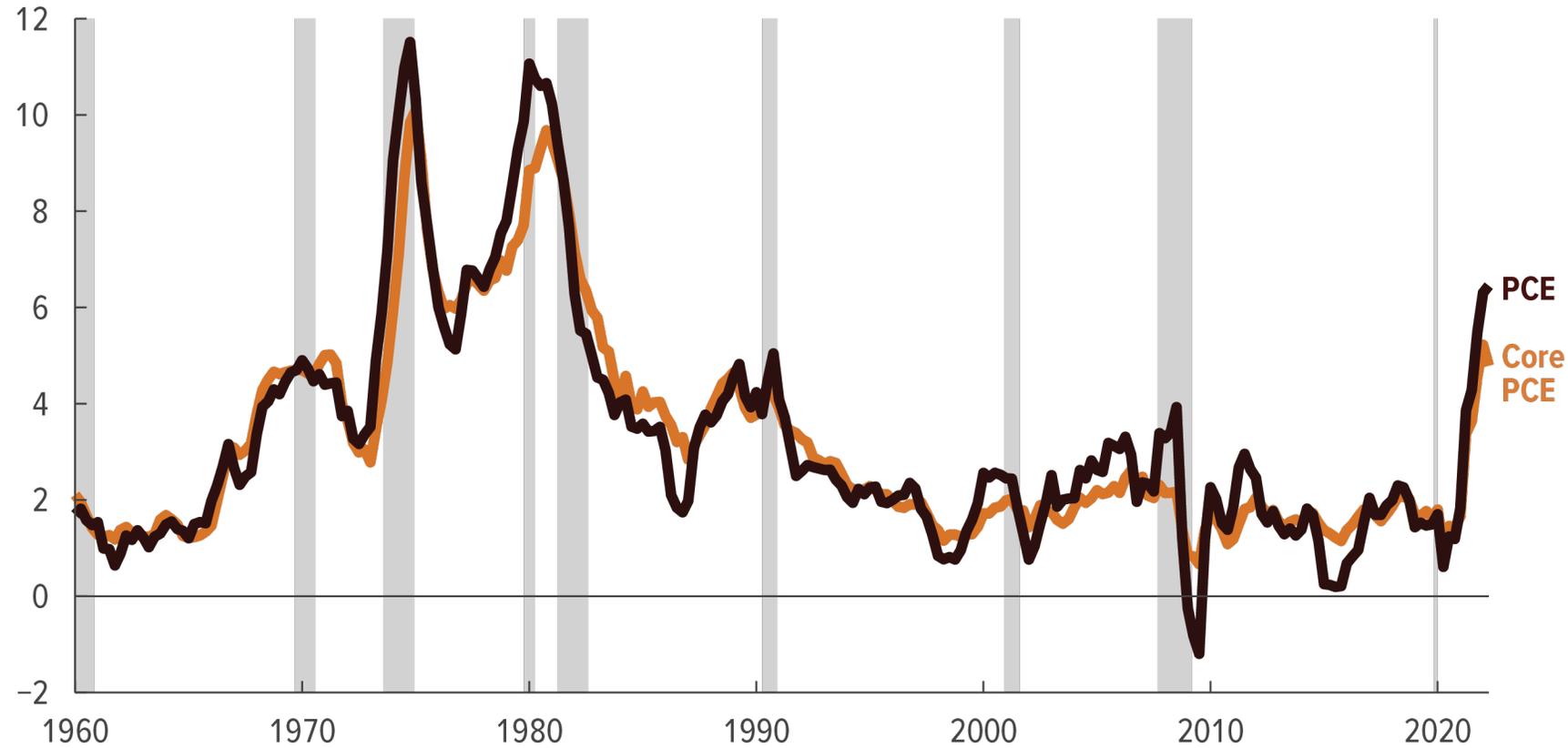
Macroeconomic Analysis Division

# Background

- Inflation: A rise in the overall price level, measured using a price index, and usually expressed as an annual rate of change.
  
- Overall Inflation
  - GDP Price Index
  
- Consumer Price Inflation
  - CPI-U: Consumer Price Index for All Urban Consumers
  - PCEPI: Personal Consumption Expenditure Price Index
  
- Core Consumer Price Inflation
  - CPI excluding food and energy
  - PCEPI excluding food and energy
  - Trimmed mean CPI and median CPI (Federal Reserve Bank of Cleveland)
  - “Sticky-price” CPI (Federal Reserve Bank of Atlanta)

# PCE and Core PCE Inflation

Percentage Change (From previous year)



# The Phillips Curve

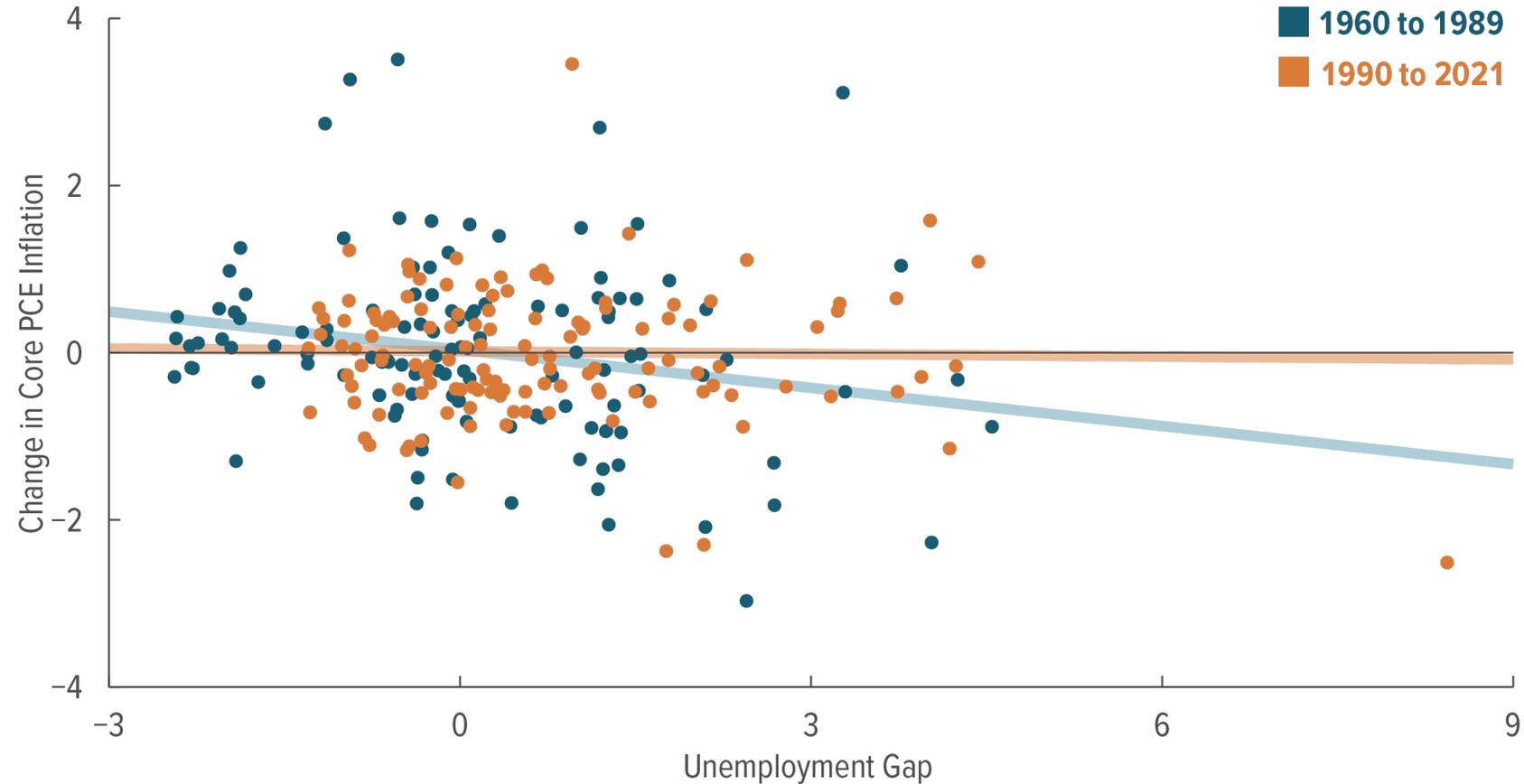
$$\pi_t = \alpha\pi^e + \beta(U_t - U^*) + \gamma Z_t + \epsilon_t$$

- Where  $\pi_t$  = inflation (for example, the percentage change in PCEPI)
  - $\pi^e$  = expected inflation
  - $U_t$  = unemployment rate
  - $U^*$  = noncyclical rate of unemployment
  - $Z_t$  = supply-shock variables (for example, energy and import prices; productivity growth)
- Factors: inflation expectations, economic slack, and supply shocks
- Focus: Beta parameter (  $\beta$  )
  - Determines how sensitive inflation is to slack
  - Unemployment gap ( $U_t - U^*$ ) is a measure of labor market slack



# The Unemployment Gap and the Change in Core PCE Inflation

Percentage Points

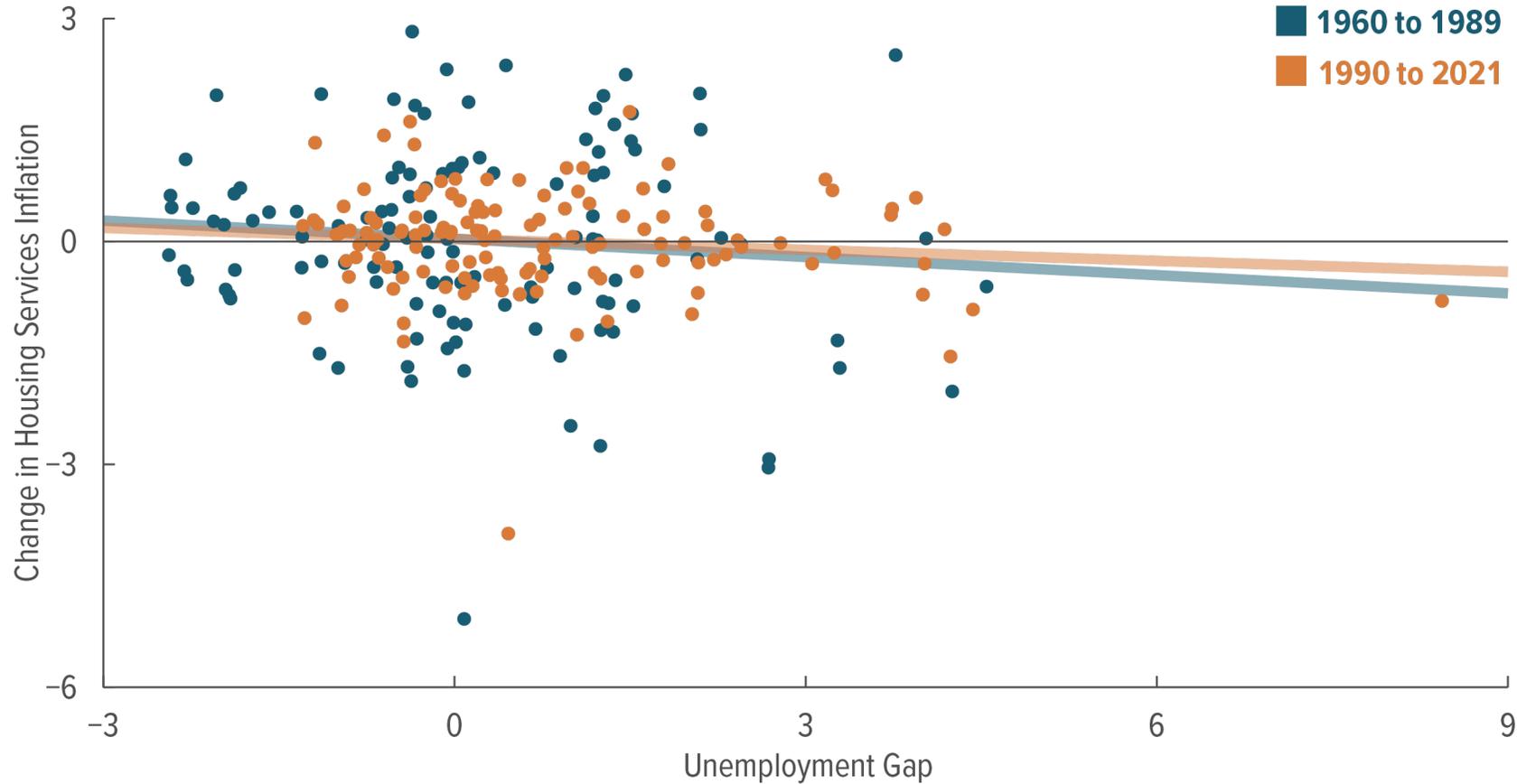


The unemployment gap is the difference between the unemployment rate and the noncyclical rate of unemployment. Core PCE inflation is measured as the rate of growth from one quarter to the next, annualized. The change in inflation is calculated as the difference in inflation from one quarter to the next.



# Unemployment Gap and the Change in Inflation in Housing Services

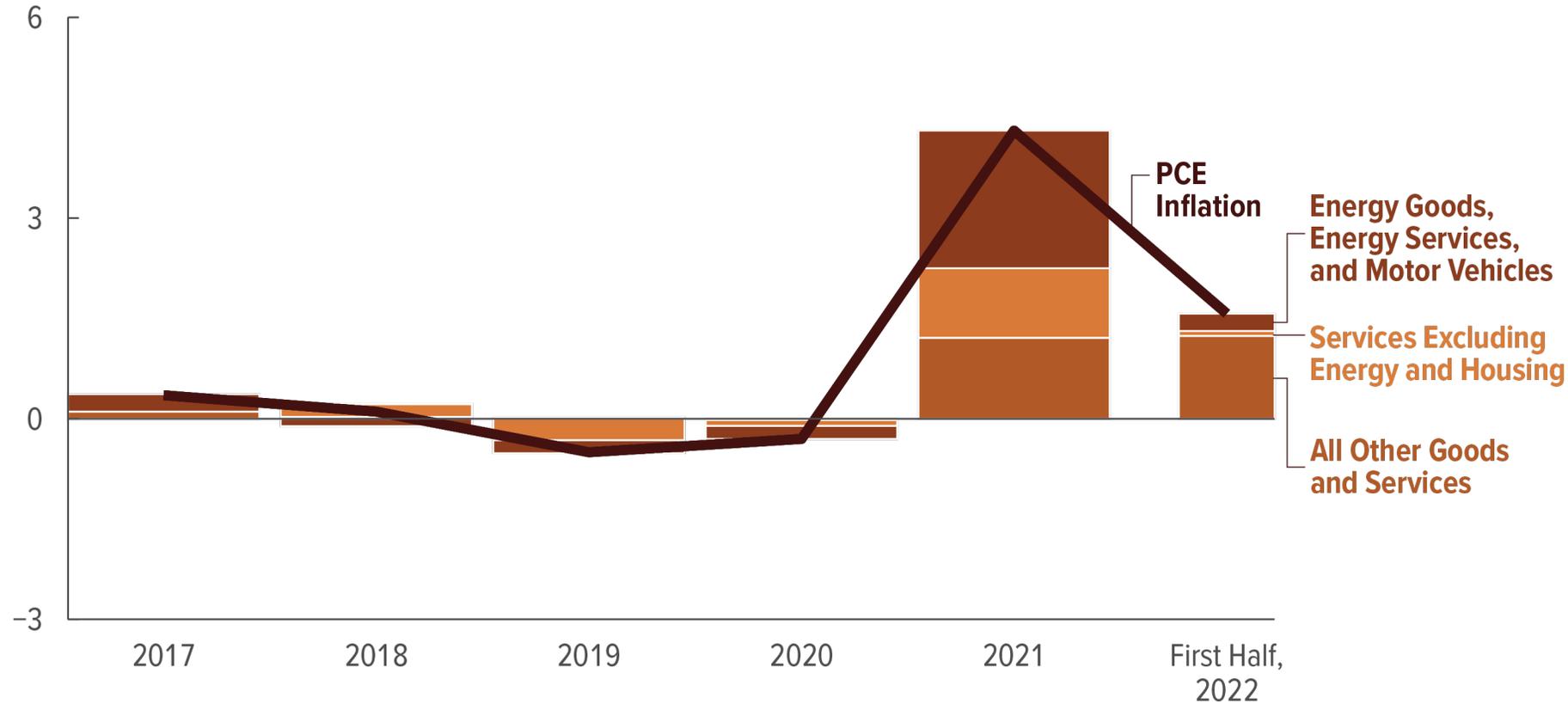
Percentage Points



The unemployment gap is the difference between the unemployment rate and the noncyclical rate of unemployment. Housing services inflation is measured as the rate of growth from one quarter to the next, annualized. The change in inflation is calculated as the difference in inflation from one quarter to the next.

# Contributions to the Change in PCE Inflation

Percentage Points

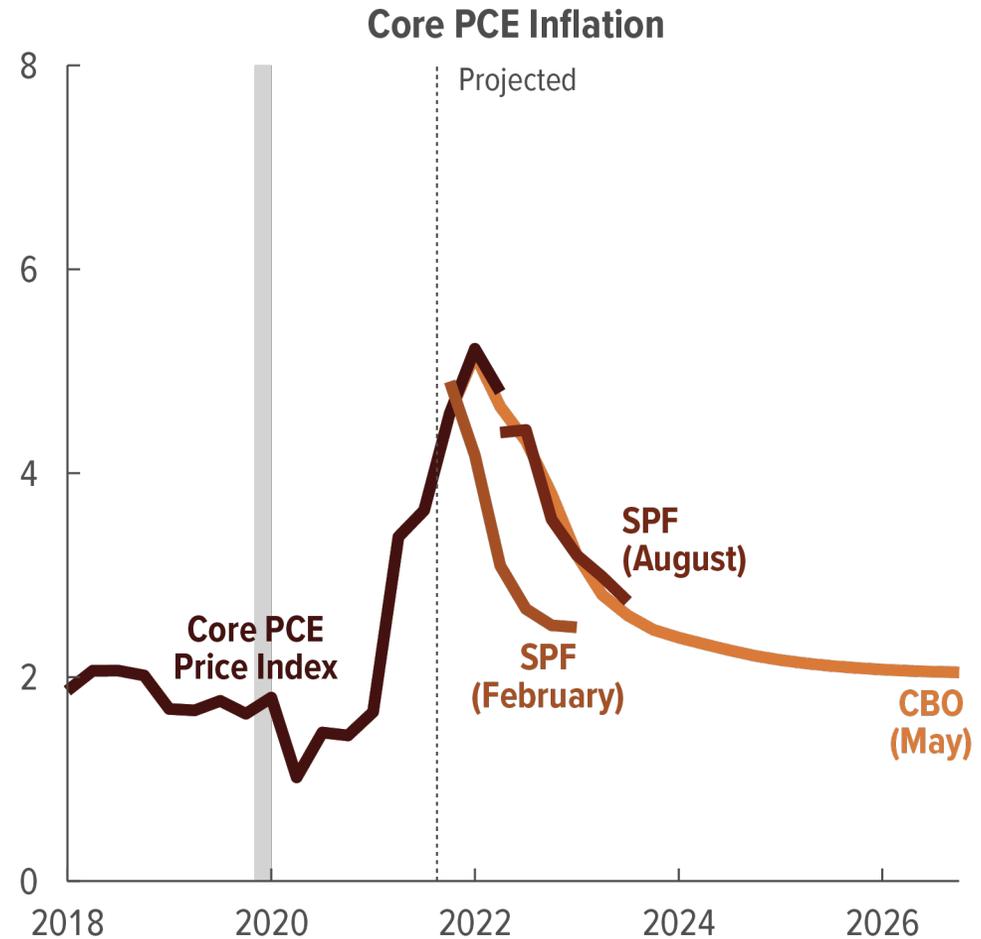
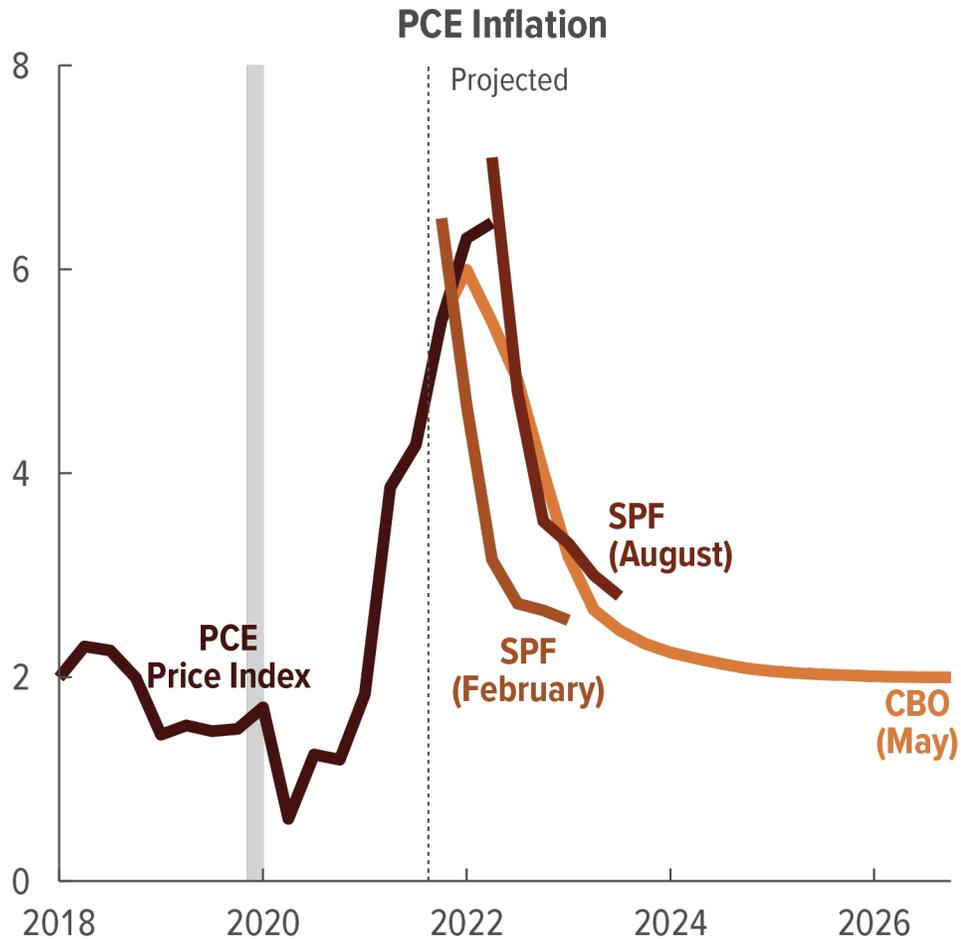


For 2017 through 2021, inflation is calculated from the fourth quarter of one calendar year to the fourth quarter of the next. For the first half of 2022, inflation is calculated from the fourth quarter of 2021 to the second quarter of 2022, annualized.



# A Comparison of CBO's Forecasts of Inflation With Those in the Survey of Professional Forecasters

Percentage Change (From previous year)



Inflation is measured from the fourth quarter of one calendar year to the fourth quarter of the next.